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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,556	11/19/2001	Ronald Bentley	135733	4539

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EXAMINER

SWERDLOW, DANIEL

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,556

Applicant(s)

BENTLEY, RONALD

Examiner

Daniel Swerdlow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-16, 19, 21, 22, 24 and 26 is/are rejected.
- 7) ☒ Claim(s) 7-9, 17, 18, 20, 23 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 6 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. Claim 6, as amended, claims the controller includes inputs for receiving a signal indicative of an inherent voltage drop for a line driver device. The original specification and drawings include no such inputs and no such signal.

4. Claim 16, as amended, contains new matter similar to that in Claim 6.

5. Claims 6 and 16 would be considered allowable matter if support for these limitations in the original specification could be shown.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1 through 19, 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over May (US Patent 6,329,800).

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8. Regarding Claim 1, May discloses an apparatus that provides power to a line driver for telecommunications signals on a twisted pair telecommunications medium (column 1, lines 31-36; column 2, lines 25-27 and 48-54) comprising: a power supply circuit (Fig. 3, reference 14; column 2, lines 55-65) coupled with the line driver device (Fig. 3, reference 12) to provide optimized (i.e., tailored) power to the driver; and a control module (i.e., controller) (Fig. 3, reference 16; column 2, line 2 through column 3, line 14) that receives a property of the drive signal (i.e., a signal indicative of the operating condition of the loop) and generates a control signal to the power supply circuit to optimize power consumption of the driver. Therefore, May anticipates all elements of Claim 1 except a plurality of line driver devices. Mere duplication of parts has no patentable significance unless a new and unexpected result is produced. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

9. Regarding Claims 2 through 5, May further discloses the control module, power supply circuit and line driver interconnected (Fig. 3, reference 12, 14, 16; column 3, lines 63-67). The variations in correspondence between the elements are simply replication of elements and their effects (in the case, for example, of the multiple controllers each corresponding to one of a plurality of drivers as in Claim 2) or simple integration of elements without unexpected results (as in the use of a common controller for a plurality of drivers as in Claim 3). As such, the basic configuration of one driver, one control module and one power supply circuit as disclosed in May makes obvious all the variations. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) and *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

10. Claim 10 is essentially similar to Claim 1 and is rejected on the same grounds.

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11. Regarding Claims 11 through 15, May further discloses the control module, power supply circuit and line driver interconnected (Fig. 3, reference 12, 14, 16; column 3, lines 63-67). The variations in correspondence between the elements are simply replication of elements and their effects (in the case, for example, of the multiple controllers each corresponding to one of a plurality of drivers as in Claim 11) or simple integration of elements without unexpected results (as in the use of a common controller for a plurality of drivers as in Claim 12). As such, the basic configuration of one driver, one control module and one power supply circuit as disclosed in May makes obvious all the variations. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) and *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

12. Claims 19 and 21 similarly represent obvious variations of the system disclosed by May with the system replicated and the replicated control modules made integral.

13. Regarding Claim 24, as stated above apropos of Claims 19 and 21, May discloses an individual control line between the drive module output and the control module (Fig. 3, reference 12, 16; column 3, lines 63-67). Because the control module controls the power supply, these control lines constitute "individual communication lines intermediate [the] line driver and said power supply means".

14. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over May in view of Shimamori (US Patent 6,204,650). As shown above apropos of Claim 10, May anticipates and/or makes obvious all elements except the control means coupled with the line driver means via a multiplexer for determining extant operational voltage. Shimamori discloses a power supply apparatus that uses a multiplexer to selectively communicate one of a plurality of output

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voltages to a processor (Fig. 3, reference 34, 41; column 5, lines 8-20). Shimamori further discloses that use of the multiplexer reduces the scale of the circuit and allows sharing of an A/D converter (column 7, lines 29-32). It would have been obvious to one skilled in the art at the time of the invention to apply output voltage multiplexing as taught by Shimamori to the system anticipated and made obvious by May for the purpose of realizing these advantages.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over May in view of Harris et al. (US Patent 6,333,654). As shown above apropos of Claim 10, May anticipates and/or makes obvious all elements except selectively coupling the driver to an appropriate one of a plurality of power supply lines. Harris discloses a variable power supply line driver with supply voltage selectors (Fig. 4, reference 44, 45; column 6, lines 4-7) that selectively couple a driver (Fig. 4, reference 36) to one of a plurality of power supplies (Fig. 4, reference V1, V2). Harris further discloses that power supply switching increases efficiency and reduces distortion (column 1, lines 35-50). It would have been obvious to one skilled in the art at the time of the invention to apply selectively coupling the driver to an appropriate one of a plurality of power supply lines as taught by Harris to the system anticipated and/or made obvious by May for the purpose of realizing these advantages.

Allowable Subject Matter

16. Claims 7 through 9, 17, 18, 20, 23 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

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limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

17. Regarding Claim 7, May discloses adaptively varying power during operation of the line driver (Fig. 2). As such, May fails to anticipate or suggest determining loop conditions during a startup training period.

18. Regarding Claims 8 and 17, while May discloses communication of the drive module drive signal to the control module to determine a dynamic control signal for the power supply circuit, May does not disclose the use of polling for this communication. Harris discloses power supply control responsive to a driver input rather than a driver output (Fig. 4). US Patent 5,898,342 to Bell discloses a signal processor (Fig. 2, reference 210) that is a common source of driver input signal and power supply selection signal. As such, the prior art fails to anticipate or fairly suggest the use of polling for communication of the control signals between a driver and a control circuit.

19. Regarding Claims 9 and 18, while May discloses determination of power level from the input signal itself a digital representation of the input signal an amplifying setting for the input signal (i.e., a voltage amplifying setting or a current amplifying setting), a volume setting for the input signal when the input signal is an audio signal, and/or the magnitude of the input signal either as an RMS value or a peak voltage value (column 3, lines 1-7), May fails to anticipate or suggest use of data rate, loop length or load requirements.

20. Regarding Claim 20, while May discloses communication of the drive module drive signal to the control module to determine a dynamic control signal for the power supply circuit, May does not disclose the use of an addressed communication bus for this communication.

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Harris discloses power supply control responsive to a driver input rather than a driver output (Fig. 4). US Patent 5,898,342 to Bell discloses a signal processor (Fig. 2, reference 210) that is a common source of driver input signal and power supply selection signal. As such, the prior art fails to anticipate or fairly suggest the use of an addressed communication bus for communication of the control signals between a driver and a control circuit.

21. Regarding Claim 23, while May discloses communication of the drive module drive signal to the control module to determine a dynamic control signal for the power supply circuit, May does not disclose the use of an addressed communication bus for this communication.

Harris discloses power supply control responsive to a driver input rather than a driver output (Fig. 4). Bell discloses a signal processor (Fig. 2, reference 210) that is a common source of driver input signal and power supply selection signal. As such, the prior art fails to anticipate or fairly suggest the use of an addressed communication bus for communication of information signals from a power supply to a driver.

22. Regarding Claim 25, while May discloses communicating power from a power supply to a driver and communicating output voltage information from a driver to a power supply via a controller and Shimamori discloses a power supply apparatus that uses a multiplexer to selectively communicate one of a plurality of output voltages to a processor, the prior art fails to anticipate or fairly suggest communication of information from a power supply to a driver via a multiplexer.

Response to Arguments

23. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 571-272-7531. The examiner can normally be reached on Monday through Friday between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh H. Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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19 April 2005



SINH TRAN
SUPERVISORY PATENT EXAMINER